

# **OPTICAL METROLOGY OF STRUCTURES FORMED ON SEMICONDUCTOR WAFERS USING MACHINE LEARNING SYSTEMS**

## **ABSTRACT**

A structure formed on a semiconductor wafer is examined by obtaining a first diffraction signal measured using a metrology device. A second diffraction signal is generated using a machine learning system, where the machine learning system receives as an input one or more parameters that characterize a profile of the structure to generate the second diffraction signal. The first and second diffraction signals are compared. When the first and second diffraction signals match within a matching criterion, a feature of the structure is determined based on the one or more parameters or the profile used by the machine learning system to generate the second diffraction signal.